



WILLIAMSON COUNTY
Department of Sewage Disposal Management
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What is A Soil Map and How Do I Get One Made

A soil map is a graphical representation of the types of soils that are present on an area of land. In the same manner which a road map shows directions and locations of roads, the soil map will show locations and limits of specific types of soils.

Whether the area of land in question is a one acre lot in a subdivision or a 500 acre farm, the types of soils on any parcel of land can vary greatly from one part of the property to another. Soils on a hilltop are usually quite different from the soils that occupy a floodplain. Many different factors influence the type of soil that will develop on different landscapes; in middle Tennessee two dominate factors include the geology and topography of the area. The different types of soils can be grouped together and mapped out or delineated based on their unique, individual physical characteristics.

A soil map must be made by a qualified professional Soil Scientist certified by the State of Tennessee, Department of Environment and Conservation, Division of Groundwater Protection. All approved Soil Scientists have had very specific scientific and field training in the methods and techniques of mapping soils for septic system use.

In order to make a soil map, the Soil Scientist must go onto a property to see the landscape and then actually dig holes into the ground, usually with a tool called a hand auger, to physically see and touch the soil so that he can determine the type of soil present. If the Soil Scientist cannot dig through the soil, he may request that excavation machinery be brought to the site to dig holes into the ground (i.e. backhoe, power auger, etc...) so that the Soil Scientist may observe the soil to the necessary depth.

In order for the Soil Scientist to know where he is on a parcel of land, some type of reference system must be utilized. Though roads and fenced property lines can be utilized, these types of reference points are limited in their usefulness, especially if the nearest road or fence is hundreds of years away from where the Soil Scientist is working. Thus, born out of necessity, a more efficient reference system was developed and it is called Grid Staking. This is the reference system used in Williamson County for every soil map produced for the purpose of evaluating soils for septic system use. The actual process of Grid Staking must be performed by a Registered Land Surveyor. The services of the surveyor are typically obtained by the individual wishing to have the soil map prepared.

The surveyor must go onto the property to physically set the grid stakes over a specified area. Williamson County regulations require that the grid stakes be set at an interval of 50 feet, unless otherwise specified by the Department Field Staff. Once the surveyor has completed the field work involved in setting the grid, he will then prepare a plat showing the location and layout of the grid on the property to a scale of 1 inch equals 100 feet.

At this point, it is very important to briefly discuss vegetation. The vegetative condition of a parcel of land is a critical factor in affecting how the Soil Scientist (and Surveyor) is able to do his job. If the property to be evaluated is excessively vegetated with thick, scrubby undergrowth or with tall (more than 1 foot) grass and weeds, it is very likely that the Soil Scientist (or Surveyor) will refuse to go onto the property. The Soil Scientist must be able to clearly see the lay of the ground surface, in the vicinity to be evaluated, to make a soil map. Open fields (that have been bush hogged) and mature wooded areas (with very little or no undergrowth) are generally considered accessible and are usually no problem to cross by foot. However, if the property is excessively vegetated, someone will need to see that property is appropriately cleared so the Soil Scientist is able to freely navigate about the property. There are some instances

where a parcel of land will have to be cleared by hand in order to make it accessible to the Soil Scientist. It may even be necessary to wait until wintertime, when the vegetation has died down, to have the land soil mapped. **NOTE:** It is never advisable to have a contractor with a bulldozer clear a parcel of land before it has been soil mapped. A careless bulldozer operator could end up destroying an area of good soil in the process of clearing the land thus possibly rendering the property unbuildable.

With the grid staking in place and a plat prepared, the Soil Scientist can then go onto the property, proceed to each stake, dig a hole, and make an assessment of the type of soil found at each of the stakes placed on the property. The Soil Scientist, using his notes about the soils present at each stake, delineates units of similar soils and graphically represents the units on the plat. Each unit is appropriately noted as to its ability for septic system use. The final product, graphically drawn on the plat by the Soil Scientist, is a soil map.

These steps are typically followed to have a soil map prepared on a parcel of land:

1. Determine the vegetative condition of the property to be soil mapped and ensure that the land surface is appropriately cleared of excessive vegetation.
2. If the parcel is small (5 acres or less), the person in need of the soil map is to contact a Registered Surveyor and secure his services to grid stake the property. All Surveyors set their own fees; the Department of Sewage Disposal Management does not regulate fees and make no attempt to keep any records regarding what types of fees these professional consultants charge. The Surveyor will do the necessary field work and then prepare the plat showing the grid. It is recommended that all of the lot be grid staked. See Special Note
3. Secure the services of a Soil Scientist (lists are available at the Department of Sewage Disposal Management office) to do the mapping. All Soil Scientists set their own fees; the Department of Sewage Disposal Management does not regulate fees and makes no attempt to keep any records regarding what types of fees these professional consultants charge. Provide the Soil Scientist with several copies (at least 5 copies) of the plat prepared by the Surveyor. The Soil Scientist will schedule their field work accordingly.
4. Once the Soil Scientist has finished all necessary field work, he will prepare the final map product to give to his client. That individual must bring a copy of the map to the Department of Sewage Disposal Management for review.

SPECIAL NOTE: If the parcel of land is large (5 acres or more), the individual in need of the soil mapping services may find it more cost effective to secure the services of a Soil Scientist to check the land prior to having the Surveyor do the grid staking. The Soil Scientist may possibly be able to locate a favorable area for soil mapping first, thus reducing the area the Surveyor will need to grid stake. This step, in some cases, may help lower the surveying costs.

Questions regarding soil mapping should be directed to the Williamson County Department of Sewage Disposal Management.

ADDITIONAL NOTE: A Soil Map is not a percolation test. A soil map is another, completely different method utilized for the purpose of evaluating land and soil to determine its suitability for septic system use.

--In many cases, a soil map will be required in order to determine whether or not a site meets the requirements to have a percolation test conducted on it.

--In most cases, if your property has been evaluated by personnel of this office or if you are creating a subdivision and you have been told that you need to have your property soil mapped, it has already been determined that your property cannot be percolation tested.

